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SUBJECT: SYSTEMIC ELECTRICITY AND WATER SHORTAGES REQUIRE  
BOTH SHORT-TERM AND LONG-TERM FIXES

REF: KUWAIT 3469

Classified By: Ambassador Richard LeBaron for reasons 1.4 (b) and (d).

11. (C/NF) Summary and Comment: Kuwait experienced unprecedented rolling blackouts from 19-24 August. The direct cause was a coincidence of mechanical failures at power plants. However, these blackouts unmasked a more systemic problem, Kuwait's razor-thin spare electrical capacity. On the supply side, this is due to inadequate investment in new power plants, unanticipated delays in new plant construction, and poor maintenance. On the demand side, the causes are rapid population growth, a boom in real estate development, and excessive per capita consumption. None of these demand trends shows signs of abating. In fact, the Government has announced plans to use its vast budget surplus to invest in several large development projects which will only increase demand. New generating capacity is not scheduled to come online before 2008 and even then is unlikely to keep up with growing demand. Kuwait's efforts to switch from oil-based power generation to gas-based generation have been hampered by the GOK's inability to acquire a reliable gas supply. Since almost all of Kuwait's water comes from desalination plants linked to power plants, a water shortage goes hand-in-hand with the power shortage but is even more pronounced.

12. (C/NF) In the short-term, seasonal fluctuations in demand mean that blackouts probably won't return before June 12007. However, blackouts in summer 2007 will likely be more widespread and longer-lasting as the gap between supply and demand continues to widen. As a short-term fix, the GOK is exploring the option to purchase or lease mobile gas turbines. In the long term, more investment in new power plants will be required. Politically, these power shortages come at a time of high government revenue from oil and follow national elections in which the pro-reform Opposition gained a majority in the Parliament. As a result, both the Parliament and the press are blaming the Government for mismanagement and calling for heads to roll. End Summary and Comment.

Unprecedented Rolling Blackouts  
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13. (C/NF) In a 12 September meeting with Econoff, Director Suhaila Marafi of the Ministry of Energy's Electricity and Water division explained that the direct cause of rolling blackouts between 19 and 24 August had been an unfortunate coincidence of mechanical failures. The transformer for a 300 MW steam turbine had failed in June and was being repaired by Mitsubishi, its manufacturer. On August 7, a 130 MW gas generator failed in a different plant. On August 14, two more 130 MW gas turbines had to be taken offline due to

cable fault. On August 18, a 120 MW steam unit had to be taken offline due to a boiler leak. Finally, on 19 August another 300 MW steam turbine was shut down due to a bad heating fan. Until some of this lost generating capacity could be brought back online, the Ministry instituted a pattern of rolling blackouts between 1pm and 5pm with power cuts lasting no longer than 1-2 hours at a time in each affected area. During this period, maximum capacity was maintained between 8400 and 8800 MW. Marafi said this was between 1000 and 1300 MW short of peak summer demand. Since 24 August, enough of these problems have been fixed that power cuts have virtually ceased with the exception of a few sporadic and isolated blackouts in individual neighborhoods. Marafi said that once capacity is fully restored in January, there will be 9362 MW of power available. This is significantly less than Kuwait's total installed capacity (based on power ratings from manufacturers) of 10,229 MW. Marafi said the Ministry was working with the individual plant manufacturers (specifically Mitsubishi and Siemens) to make the necessary equipment modifications to bring available capacity in line with installed capacity. If all these maintenance problems were solved, there would be sufficient power generation to meet current demand, but given the rate of demand growth (estimated at 6-8% per year), demand would exceed supply before new generating capacity comes online in 2008.

#### Supply Problems - Maintenance

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14. (C/NF) When asked if this spate of mechanical failures indicated a problem with maintenance, Marafi explained that the maintenance problem was two-fold. First, in the summer of 2005, Kuwait's water supply was unable to meet demand, so

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the GOK decided to draw down a large portion of its water reserves. (Note: During winter months Kuwait builds up stores of potable water in order to be able to compensate in case demand exceeds supply in during the summer. End note.) During the winter of 2005-2006, the Ministry significantly reduced maintenance hours and increased the utilization of power generators and desalination plants in order to replenish these reserves. Second, Marafi said a large proportion of operational maintenance personnel are underqualified and unproductive. She blamed the Ministry's requirement that 70% of employees be Kuwaiti nationals which she says results in nepotism and cronyism. Marafi said that with better maintenance practices there would be far fewer equipment failures.

#### Supply Problems - Investment and New Plant Construction

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15. (C/NF) As described in reftel, the GOK's plans to build a new 2500 MW electrical plant in Al-Zour North (AZN) have been delayed due to the need to retender the project with more favorable terms and conditions for bidders. Marafi said the Ministry intended to use its existing list of pre-qualified bidders and retender the contract (now divided into four separate contracts for turbines, boilers, civil construction, and marine works) sometime in December. In the best case scenario, the AZN plant is unlikely to come online before 2010. Expansion of existing plants at Sabiya, Al-Zour South, and Shuaiba is projected to add an additional 1500 MW of generating capacity by 2008. Marafi admits that she sees no easy solution to increase power generation capacity to meet growing demand during the interim period before 2008.

#### Demand Problems - Population Growth and Rapid Development

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16. (C/NF) High oil revenues and the abundant liquidity associated with them have contributed to a real estate development boom in Kuwait. In addition to the electricity demand created by construction activity, new residences, and

new commercial buildings, the influx of more third-country migrant labor to support the construction industry has strained Kuwait's infrastructure, including electricity and water supplies. Potentially compounding this problem, the GOK has announced plans to use its windfall government surplus to invest in several mega-projects. These include construction of the futuristic "Silk City" at the north end of Kuwait Bay, creation of world-class container port facilities and a duty-free zone on Bubiyan Island, development of an "Islamic Tourism Resort" on Failaka Island, and the construction of several new housing projects. Most of these projects are still in the planning phase. Marafi admits that once the new construction begins in earnest, the Ministry will struggle to meet the increased demand for electricity and water.

#### Demand Problems - High Consumption and an Unusual Summer

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17. (C/NF) When asked if inaccurate demand forecasts had contributed to the shortfall in generation, Marafi insisted that the Ministry's projected year-on-year demand growth of 7% had not been exceeded. However, she later contradicted this statement by saying that national elections at the end of June as well as the conflict in Lebanon had meant that fewer Kuwaitis left the country this summer for relatively shorter summer vacations. She said that this had led to seasonal power consumption being significantly higher than anticipated. Marafi also cites irresponsible and excessive personal consumption of electricity and water as critical factors in the current shortages. (Note: Kuwait is ranked fourth in the world in electricity consumption per capita, and at 116 gallons per person per day, Kuwait's per capita water consumption is one of the world's highest. End note.) Marafi says public service campaigns on conservation are having only a marginal effect in a country where many people are accustomed to having their cars and sidewalks washed every day and homes are excessively air-conditioned and brimming with consumer electronics. Further complicating the water problem, treated waste water is deemed unacceptable for personal use due to Islamic concerns over cleanliness. Thus, treated waste water is used for agricultural purposes only.

#### No Easy Solution to Shift from Oil to Gas

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18. (C/NF) Kuwait's power generation is almost entirely oil-based. Overall, Kuwait consumed over 140 million barrels

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of oil for power generation in 2003 (most recent figures available). With oil production reaching approximately 2.5 million barrels per day, Kuwait is consuming about 56 days worth of oil production each year for electricity generation instead of exporting this oil abroad. Furthermore, Marafi notes that gas-based power generation would be more efficient and cleaner. However, Kuwait's access to gas is limited. A plan to construct a gas pipeline between Qatar and Kuwait was canceled due to Saudi objections to the pipeline passing through Saudi territorial waters. Proposals to import gas from both Iraq and Iran have stalled for political reasons. Even if deals with Iran or Iraq could be reached, the GOK has little confidence in the reliability of these supplies. According to some reporting in the press, the GOK has begun to talk to international companies about plans to import LNG, but at present Kuwait has none of the infrastructure necessary to receive or process liquified natural gas (LNG). Kuwaiti domestic gas production is negligible, but the Kuwait Oil Company (KOC) is currently assessing the feasibility of a major non-associated gas discovery announced in February. According to Marafi, the KOC will deliver its feasibility report on development of the newly-discovered gas field on November 1. Marafi says that if the report is positive, the plans for the AZN electrical plant will be redrawn to use gas turbines instead of steam turbines. (Note: Post has received no substantive preliminary reports regarding the gas field,

but contacts from both KOC and contractors indicate that the find appears promising. End note.)

#### The Political Dimension - "I Want Names!"

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¶9. (C/NF) Given the country's wealth and vast income from oil revenue, the Government is being blasted in the media over the recent power and water shortages. In the newly-elected Parliament, Opposition MPs, who campaigned on an anti-corruption, pro-reform platform, hold a simple majority of 34 out of 65 seats. MPs and Op-Ed writers alike have called for high-level investigations and the resignations of those government officials deemed responsible. The newly-appointed Energy Minister, Shaykh Ali Al-Jarrah Al-Sabah, pledged to get to the bottom of the crisis. On 13 September, he temporarily suspended the Ministry's Undersecretary and four of his assistants for three months to allow for an unbiased investigation of the electricity and water crisis. He said the investigating committee, which he is heading, would complete its probe as soon as possible. According to Marafi, the Minister has instructed the investigating committee to include not only the causes of the shortages but also the names of those to be held responsible. Some MPs have already called for the Minister's resignation. The results of the investigation are expected before the start of Ramadan on September 24.

#### Seeking Short-term and Long-term Solutions

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¶10. (C/NF) In the short term, in order to increase surge capacity, Marafi said the Ministry was in discussion with private companies to either buy or lease mobile gas turbines that could be brought online in the case of any further mechanical failures in fixed power plants. To reduce water consumption, the Ministry has reduced water pressure below normal levels. The Ministry is also working with both plant manufacturers and contractors to enhance the generating capacity of existing equipment. In the long term, Marafi says that the GOK will need to dramatically increase its investment in power generation and desalination in order to meet growing demand. She says that ideally these new plants would be gas-based rather than oil-based. Marafi also suggested that the reduction or elimination of government subsidies combined with an effective conservation campaign could help to slow down the growth in consumption.

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